52. *Eohydnophora, a New Genus of Cretaceous Corals.*

By Hisakatsu YABE and Motoki EGUCHI.

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A fossil coral here dealt with was collected by Mr. T. Kobayashi of the Geological Institute of the Tokyo Imperial University, from Okuminodani near Ryôseki, Tosa province. It is from a limestone hitherto generally accepted as the Jurassic Torinosu limestone; but Kobayashi now suspects its belonging to the younger, Monobegawa series (Lower Cretaceous) in his recent stratigraphical study of this geologically complicate district.

The specimen is embedded in limestone and its worn surface shows no surface features of the original stock of the coral; but the preservation of inner structure is excellent, and it reveals in thin section, the features characteristic of the Lower Cretaceous "*Hydnophora*."

This is not the first information on the occurrence of the Lower Cretaceous "*Hydnophora*" in Japan; we had already several specimens of a similar coral from Ôsima, Motoyosi-gun, Rikuzen province and another large boulder of the same form from the *Orbitolina*-sandstone of Raga, Tanohata-mura, Simo-Hei-gun, Rikutyû province; the preservation of the inner structure of corallum is not satisfactory in the specimens from the former locality, but sufficiently good in that of the latter for recognition by the junior author who studied them, of a close affinity of these specimens to "*Hydnophora*" *picteti* Koby, a species first described from the Urgonian of Reignier (Savoy) of Switzerland, and later found to have an extended distribution in Europe from the Neocomian to the Cenomanian. The first Japanese form was reported by the junior author[1] as "*Hydnophora*" cfr. *picteti*. The present specimen from Okuminodani differs but little from this in detail structure.

Hydnophora was established by Fischer de Waldheim in 1807 for some fossil and recent forms; its genotype subsequently selected by T. W. Vaughan is *H. exesa* (Pallas), a species very common not only in the Indo-Pacific coral seas, but also in the Japanese water. Many specimens of this species in the collection of our Institute of Geology and Palaeontology, Tôhoku Imperial University, Sendai, have been used for comparison with the fossil forms now in concern.

In so far as the inner structure examined in thin section concerns, there is one important difference between the Lower Cretaceous forms and the recent *Hydnophora*, namely; the recent form has highly blassy dissepiments, while the fossils always show almost horizontal dissepiments or tabulae and has no blassy structure. In this feature, our fossils are much like the Cretaceous genus *Eugyra*, though evidently distinct from it by having shorter discontinuous, instead of longer and continuous collines.

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[1] M. Eguchi: Proc. **12** (1936), 70.

Formerly *Hydnophora* was thought to be a genus ranging from the Lower Cretaceous to recent; in 1930, however, P. Oppenheim[1] pointed out that most species of the Upper Cretaceous forms of Gosau are fungid corals, having perforated (trabecular) septa; these were separated by him under the new genus *Hydnophoraraea*. He further suggested that most species of the Lower Cretaceous *Hydnophora* may possibly belong to this genus. Our Lower Cretaceous fossils possess septa of the same nature with recent *Hydnophora*; they are not the *Hydnophoraraea* type.

We are provided neither with any information about the inner structure of corallum of the European Lower Cretaceous *Hydnophora*, nor are we in position to examine its good specimens in thin sections for comparison with the recent species and our fossils; hence we are not quite sure about the generic identity of our Lower Cretaceous forms with those from Europe, though this seems to be a probable case.

Eohydnophora, gen. nov.

Corallum as in *Hydnophora*, but differs from it by having horizontal dissepiments or tabulae instead of blassy dissepiments.

Genotype: *Eohydnophora tosaensis* sp. nov.

Eohydnophora tosaensis Yabe and Eguchi.

Figs. 1–3.

Corallum massive or encrusting, 30 mm. thick. Calices in series, bounded by thin discontinuous wall forming short collines. In transverse section, septa thin, short, subequal, parallel, 7–8 per 5 mm., in alternation with a rudimentary one which is visible under magnification (fig. 1), septa of adjacent series lying opposite on either side of thin, intervening walls, and altogether forming star-shape clusters, 1.5–8 mm. long. Walls 2.5 mm. apart. Columella parietal, usually absent, if present formed by inner prolongation of septa and parallel to walls. In longitudinal section, dissepiments almost horizontal, tabular, 7–8 per 5 mm. in average, more and less crowded zones obscurely in alternation.

Remarks: The present species agrees in almost all features with "*Hydnophora*" cfr. *picteti*[2] from the Lower Cretaceous of the Miyako district, but the collines are narrower and shorter in the former than in the latter. *Hydnophora* sp. described by W. O. Dietrich,[3] another allied form from the Neocomian of East Africa seems to possess smaller collines and valleys, while *H. picteti* Koby[4] has broader collines and valleys.

Loc. Okuminodani, near Ryôseki, Takaoka-gun, Tosa province. The holotype and thin sections are in the possession of Mr. T. Kobayashi of the Geological Institute of the Tokyo Imperial University; a part of it was kindly donated by him to our Institute of Geology and Palaeontology, Tôhoku Imperial University (Reg. No. 59344).

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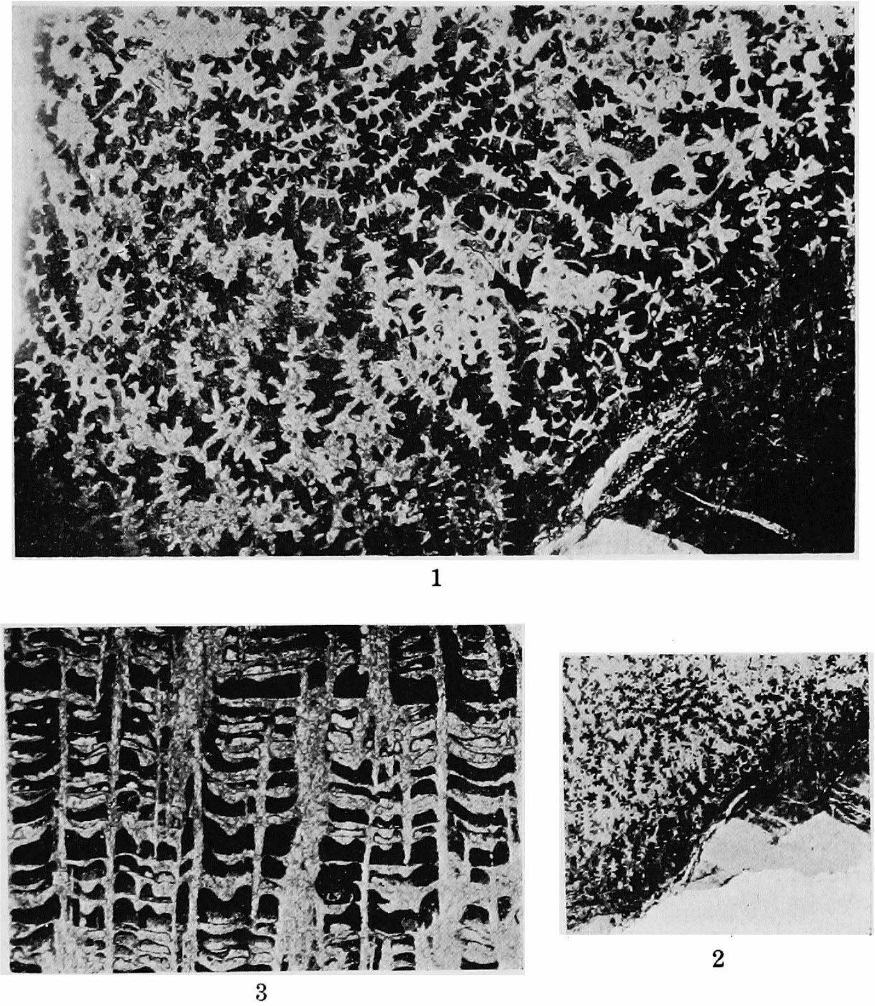
[1] P. Oppenheim: Anthozoen d. Gosauschichten., p. 219, 1930.

[2] M. Eguchi: loc. cit.

[3] W. O. Dietrich, Palaeontographica, Supplm. VII, p. 96, 1926.

[4] F. Koby, Polyp. cret. de la Suisse, p. 45, 1898.

Finally we wish to thank Mr. T. Kobayashi for the kind offer of this specimen to our study.



Figs. 1–3.

1, Horizontal section, ×3; 2, Horizontal section, ×1; 3, Longitudinal section, ×ca. 3.